ABSTRACT

The present invention relates to methods and apparatus for the repair of blood vessels, using a novel prosthetic graft within the blood vessels. The more concrete, the present invention relates to devices and methods for delivering and stapling endovascular grafts to the blood vessel wall. A subject of the present invention is a system and method for delivering and anchoring a graft of individual dimensions within a recipient's blood vessel. This system comprises: a) a graft configured as a tube from biologically compatible material the individual dimensions whereof, such as the diameter and length are defined by clinical state of the recipient and results of angiographic dimensions of its operated blood vessel, and b) a set of assembly units for assembling on its basis at least one device for delivering a graft and simultaneously securing this graft at both its ends to the blood vessel wall. The suggested set of assembly units includes: at least one proximal head and at least one distal head which serve to hold the graft in the process of its delivery within the blood vessel, and for securing its proximal and distal end to the wall of an operated blood vessel. The proximal and distal heads have a through axial hole with an actuator therein, as well as means for holding a corresponding graft end and means for securing this graft end to the blood vessel wall. Besides, the suggested set of assembly units includes at least

one intermediate tube, at least one control means, at least one additional hold-down element, and at least one flexible control element.

22 Claims, 13 Drawing Sheets